



吉娃斯愛科學繪本

賽德克族語

第6集
看不見的牽絆

翻譯 / 配音

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吉娃斯愛科學

賽德克族語版

第六集 看不見的牽絆



族語全文朗讀



英語全文朗讀



華語全文朗讀





Ini qtai ka nndilan ncbeyo



So Small You Can't See



看不見的牽絆





Moda sdiyan huling qalux ka Tiwas
daha ka Awe.



Giwas and Behuy found a little black
puppy.



吉娃斯和飛卉撿到一隻小黑狗。





Awe ka pqdiyan huling qalux nii, tnyanun daha “Sume” ka ngayan huling nii. Kari Seediq ka Sume nii.



Behuy fed the dog and named it Nalu. In the Atayal language, Nalu means “black bear”.



飛卉餵小黑狗吃東西，叫小黑狗「嘎魯」。
「嘎魯」在賽德克語是「黑熊」的意思。





Desun na Tiwas mosa sapah ka Sume nii.
Wada na qyutun kana pala na bubu na
Tiwas nii.



Giwas brought Nalu home. Nalu chewed
some cloth that Mother had woven.



吉娃斯帶嘎魯回家。嘎魯咬壞了媽媽織的布。





Mseyang ka bubu na, kiya ka asi mexi na Tiwas qduriq ngaguc ka Sume na.



Mother got angry, so Giwas had to grab Nalu and run away.



媽媽生氣了。吉娃斯只好抱著嘎魯逃走。





Mosa skadi Pawan hatang pdanga
Sume ka dheya nii, ani si ini sruwa
ka Pawan.



The two kids begged Bayan to adopt
Nalu, but he refused.



兩人拜託巴彥收養嘎魯，但是巴彥
不答應。





Desu daha trima yayung ka Sume nii, ado so mdheriq hari qtaan ma, ini beyo sllaun seediq pdanga.



Giwas and Behuy wanted to take Nalu to the river for a bath. Maybe it would be easier to find a new owner if he was clean.



吉娃斯和飛卉想帶嘎魯去河邊洗澡。也許乾淨的樣子比較容易找到新主人。





“Iya bale desi yayung ka Sume ga!” mesa rmengo ka Pawan, asi su naq ka mangal qsiya mnenaq liwas hiya.



“You can’t take Nalu to the riverside!” Bayan said nervously. He told them to get taro leaves to scoop water out of his water basin.



「不可以帶嘎魯去河邊！」巴彥很緊張地說。一定要他們摘山芋葉回來舀水甕的水。





Mangal waso bgurah ka Tiwas. Mgsama, mtumun, maamang hari rako na ka cceka. Awe de wada mangal waso rutiq hari. Rako na so mgqalux hari, bbaro ka waso na, cceka na de so truma hari.



Giwas picked some clean taro leaves, light green, and round, with a shallow depression. Behuy picked dirty leaves, dark green, and longer with a deeper depression.



吉娃斯摘了很乾淨的葉子。粉綠色、圓圓的，凹的地方比較淺。飛卉摘到髒髒的葉子。深綠色，葉子比較長，凹的地方比較深。





Mkqmiyuc ka mita waso ka Sume ga.
Hterun na Pawan ga.



When Nalu saw the leaves, he tried to
chew on them too! Bayan stopped him
quickly.



嘎魯看到葉子就想咬。巴彥急忙阻止牠。





Ye ado wada mangal cahu waso brayo ka
Awe ga, mekan de maha mnarux denu.



The leaves Behuy had gathered were
giant elephant's ear, which are poisonous
to eat.



原來飛卉拿的是有毒的姑婆芋葉，吃了
會中毒。





“Ado so kingal bale qtaun ta ka brayo nii de, huwa kesun ka qmita niqan cuhu?” rmengo ka Tiwas.



“How can you tell the difference by looking at the leaves?” Giwas asked.



「只看到其中一種葉子時要怎麼分辨呢？」
吉娃斯問。





“Brayo bale de niqan uban kesun naymi ma, tmumun na tumun ka qsiya tmalang menaq brayo baro hiya.” mesa ka Pawan.



“The surface of the taro leaves have fine nanoscale cilia hairs that cause water droplets to collect and roll around.” Bayan said.



「山芋葉子上面的奈米級纖毛讓水聚集成水珠，在葉子上面滾來滾去。」巴彥說。





Qmita bale ka dheya daha, uka brahan qtaun ka kesun na uban kiya. Mbahan ka Awe, hlee na malu puqan ka kesun daha naymi kiya.



The two kids looked closely, but couldn't see the hairs. Behuy got excited when he heard the word “nano” because he thought it was a delicious food.



兩人看了半天，看不出葉子上有毛。聽到「奈米」，飛卉很開心，以為是好吃的食物。





Mhulis rmengo ka Pawan mesa: “Naymi de biciq biciq riyung knbbaro na, uka bale qqtaan.”



Bayan laughed and said: “A nanometer is a very, very small measurement of length, you can’t see it with the naked eye.”



巴彥笑著說：「奈米是很小很小的長度單位，用眼睛是看不出來的。」





Piya bale knbbiciq na kesun naymi? mesa ka Pawan: “Ado so pntnaun su knpparu na brayo nii, uban na brayo nii de, maha mntena uban puto riyung na Sume nii ka knbbaro na.”



How small is it really? Bayan said: “If the taro leaf was as big as the ancient battlefield, the cilia hairs would be the size of the smallest hairs on Nalu’s body.”



奈米到底有多小？巴彥說：「如果把山芋葉變成像古戰場那麼大，葉子上的纖毛就變成像嘎魯身上最細最短的毛一樣長。」





Ma mukela smeli tmumun qsiya ka uban biciq nii?



Why do the cilia hairs turn water into droplets?



為什麼纖毛可以聚集水珠呢？





Pkuparu su mita brayo nii, mqita su bobo brayo nii niqan qpupuh bungu, bobo bungu na hiya yaani niqan 20 dehuk 50 mdheriq kesun daha naymi, knbiciq na mntena qumi rosoku biciq riyung.



If you magnify the taro leaves, you can see that the surface is uneven. Each protruding structure has needle-like waxy structures 20 to 50 nanometers in size.



如果把山芋葉變很大來看，會看到葉子表面其實是凹凸凸的。每個凸出的地方，上面又有20個到50個奈米那麼小又像針一樣的蠟質東西。





Ini skuxul msuupu qumi rosoku biciq mdheriq ka qsiya nii, anu ado naymi hayan, kiya ka ini bale skuxul seedan waso ka qsiya nii.



Water “doesn’t like” to touch those waxy structures.



水「不喜歡」和葉面上那些蠟質東西在一起。可是因為「奈米」的關係，水就更「不喜歡」貼在葉面上。





Mesa ka Tiwas: “Uxe biciq naymi peni?
Ketu bale beyax na?”



Giwas said: “Isn’t nano really small?
How can it have such a big impact?”



吉娃斯說：「奈米不是很小嗎？有那麼厲害嗎？」





Mesa ka Pawan: “Bobo waso hiya niqan qpupu bungu, baro na dungan niqan kesun qumi rosoku biciq, kiya ka mnegu riyung ptebuk ka qsiya daha ka qumi kiya dungan.”



Bayan said: “All of the protruding areas on the surface are full of nanoscale waxy needle-like structures, increasing the contact area with water, so the water doesn’t like to touch the leaf 's surface.”



巴彥說：「葉面上每個凸出的地方上面又長滿奈米級像針一樣的蠟質東西，讓水和蠟質東西的接觸面積又更多更多了。」





Anu ini skuxul sqapah bobo waso brayo ka qumi rosoku nii, kiya mssqapah nanaq ka qsiya nii, tdoruy naq ka bobo waso brayo hiya di. Kika tdoruy dheran truma de, wada na desun kana ka rutiq waso baro hiya, kiya so mdheriq ka qtaan bobo waso nii.



Because the water doesn't like to touch the waxy structures, the water on the leaves collects into droplets and rolls around on the surface. When the droplets roll off the leaf, they bring dust and dirt with them, so the leaf becomes clean.



因為不喜歡和葉面那麼多的奈米級蠟質東西貼在一起，葉面上的水就聚集成水珠，在葉面上滾來滾去。水珠從葉面滾下時，也順便把葉面的灰塵帶走，葉面變得很乾淨。





Prading klaun so nii, kndalax waso na ren hayan, ki kesun daha renyesiawin. So kiya ka qraqil sayeu duri, kiya ka mduwa riyung Imanguy icilung!



This phenomenon was first discovered on lotus leaves, so it is called the lotus effect. Shark skin has the same effect, so sharks can swim really fast!



這種現象，最早是在蓮葉上發現的，所以又叫做蓮葉效應。鯊魚皮也有同樣的效果，所以鯊魚才可以游得很快！





Ye kela naq so kiya! Kiya msuupu
mqaras bale trima Sume.



So that's how it works! They all
happily gave Nalu a bath.



原來如此！大家開心地一起幫嘎魯洗澡。





Snkuxul riyung Pawan ka Sume,
kntetu mosa snnangi Pawan.



Nalu really liked Bayan and wouldn't
stop playing with him.



嘎魯很喜歡巴彥，不停跟巴彥撒嬌。





Lmngelung sbiciq ciida dnanga na
Sume wada tuting yayung truma,
bsiyaq bale naqah kuxul na Pawan.



Bayan became sad because he was
reminded of a dog named Nalu he had
as a kid who fell into the river.



巴彥想起他小時候養的嘎魯掉進河裡，
讓他難過很久。





Mesa ka Tiwas: “Cbeyo mnarux paru ka Mona, naqah bale kuxul mu duri, ani si wada mu blequn bale snbrinah heya!”



Giwas said: “Nainai once got really sick and I was sad too, but I took good care of him!”



吉娃斯說：「乃奈之前病得很重，我也很難過，但我很仔細的照顧乃奈喔！」





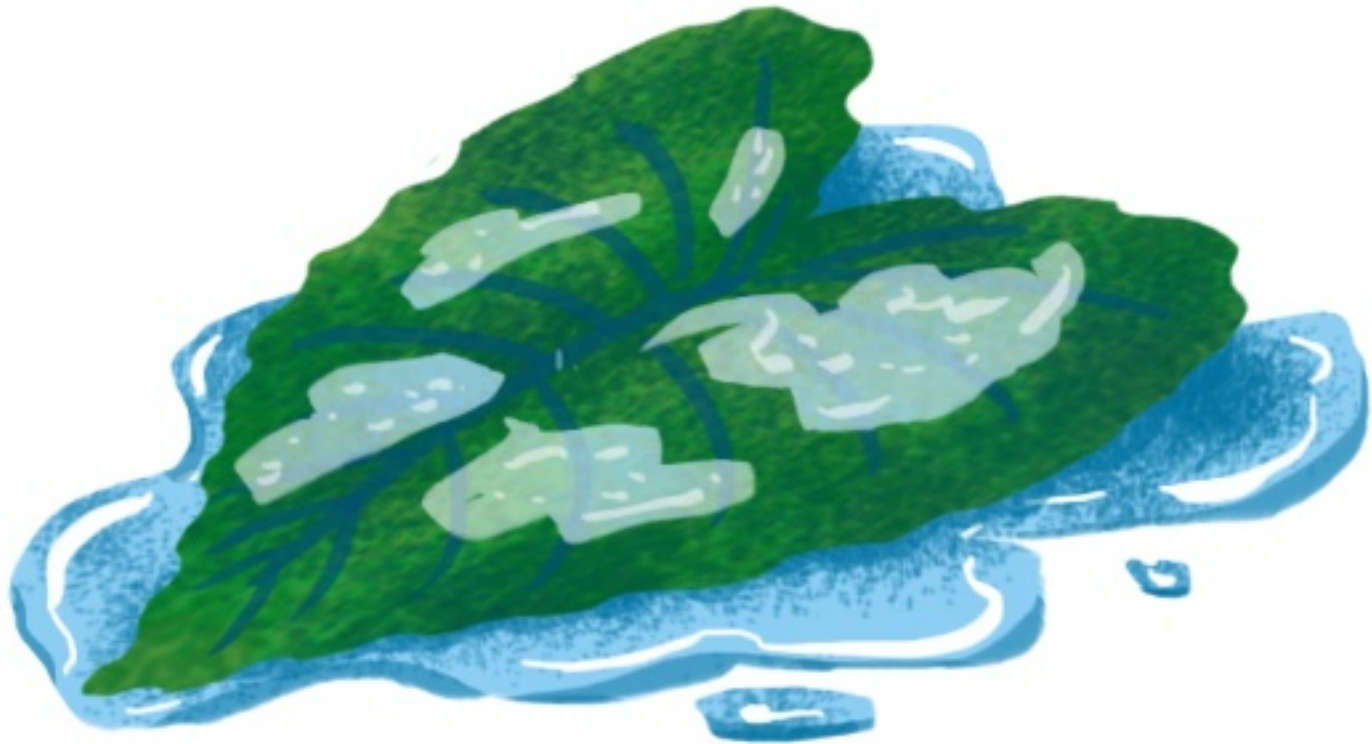
Imngelung mesa yaani wada mhemuc mekan maanu, kiya mnarux nbuyas ka Mona ka Pawan nii, Imngelung ka Tiwas nii duri, mrebu cida mnangal “waso brayo” mege qsiya nmahun na Mona.



Bayan thought that maybe Nainai had been poisoned, and Giwas remembered that she had used “taro leaves” to bring him water that morning.



巴彥正懷疑乃奈是吃壞肚子時，吉娃斯突然想起早上還用「山芋葉」裝水給乃奈喝。





“Waso brayo” kiya, ki bale ini
ptumun qsiya?



But that “taro leaf” didn’t form
water droplets.



但是那片「山芋葉」好像不會聚
集水珠？





Ki mseyang ka Mona nii, rmengac
paru. Kela naq wada mekan cahu
na waso brayo di!



Nainai got angry and cried out.
Apparently Nainai had been
poisoned from the elephant's ear!



乃奈很生氣，叫得更慘。原來乃奈
中了姑婆芋的毒！



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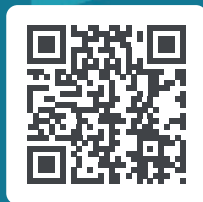
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 粉絲專頁



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